07-Rees-077368.qxd 3/15/2007 7:32 PM Page 1

S|S|S

ABSTRACT This paper examines the content, form and function of popularized accounts of primatological research in the field. Based on the textual analysis of 11 popular accounts published from 1964 to 2001, it demonstrates that a key element of such scientific writing is the construction and presentation of the primates themselves as knowledgeable actors within particular social, ecological and moral landscapes. It places these accounts in the context of the problem of anthropomorphism within the history of the behavioural sciences, and argues that, given the importance of avoiding anthropomorphism in primatological research, the presentation of primate research subjects as persons must serve some significant function. It suggests that while one reason for this might be the severely endangered status of many primates, another might be found in the development of particular methodological strategies for conducting field site research, strategies that may help researchers form individualized relationships with their research subjects. However, such public productions of primate personality have political consequences, consequences that the science studies community needs to consider more carefully.

Keywords anthropomorphism, emotion, field science, methodology, popular science, primates

Reflections on the Field:

Primatology, Popular Science and the Politics of Personhood

Amanda Rees

> We scientists are privy to a rare and precious opportunity when we come to know intimately nonhuman animals living in their own worlds. We have a responsibility to these animals to show other people who they really are – sentient beings who matter to one another, living lives as full of drama, and emotion and poetry as our own. To perceive the planet as populated with billions of such creatures staggers the imagination, but it is true, and if we want the world of the future to retain such richness, we need to become ever more conscious of this reality before it is too late. (Smuts, 1999 [1985]: xv–xvi)

There is a form of scientific communication with the public that remains neglected, both in terms of its potential political and pedagogical functions and its relevance to the future development of sociological and historical

Social Studies of Science **37/? (? 200?) 1–27**
© SSS and SAGE Publications (Los Angeles, London, New Delhi and Singapore)
ISSN 0306-3127 DOI: 10.1177/0306312707077368
www.sagepublications.com

PROOFONLY

07-Rees-077368.qxd 3/15/2007 7:32 PM Page 2

understandings of science. This is a genre of scientific writing that defies easy classification: part adventure story, part autobiography, part textbook, it nevertheless represents an aspect of scientific research that is becoming ever more politically and practically important as the consequences of unrestricted human engagements with natural systems become more evident. These are accounts of scientific research in the field produced for non-specialist audiences; accounts that are usually, but not always, focused on non-human behaviour – what wild animals do, and why they do it. Although field science has begun to attract rigorous attention, which builds on established histories of fieldwork in anthropology, geology and natural history,1 and is steadily developing into a distinct topic of interdisciplinary interest,2 the public communication of fieldwork results has received less notice. This is a surprising lacuna within the literature, especially when one considers the extent to which wider public cultures have tended to treat stories of animal behaviour as directly relevant to human behaviour. This paper seeks to address this gap by examining the content and context of public presentations of primatological knowledge and their consequences.

Public Primatology and Animal Sociology

In order to understand the significance of these accounts of primate behaviour, it is helpful to review the history of animal behaviour studies in the post-war period. That period saw a dramatic growth of interest in the sociology of animal communities, based partly on the recognition that such communities were increasingly endangered, and more specifically on the wider implications that such research might have for understanding of human behaviour.[3] Animal communities were thus treated as proxies for certain aspects of human societies, just as animal bodies had long stood as surrogates for human bodies in anatomy and physiology laboratories. In particular, primates were to become fundamental to this strategy for understanding human society. However, while the behaviour of non-human animals provided grounds for speculation about the nature of human social life, scientists stressed the necessity of remaining aware that animal behaviours were not *the same as* those found in humans. Throughout the 20th century, anthropomorphism – speaking and writing of non-human animals as if they had the mental and emotional capacities of humans – was treated in the behavioural sciences as profoundly unscientific (Watson, 1913; Kennedy, 1992).[4] Hence, students of primate societies had a rather complex path to negotiate: they examined animal behaviour in the hope of gaining insight into the origins and functions of human communities, but at the same time it was necessary to police the species boundary in order to avoid anthropomorphism. Analogy was not homology, although it could be metaphor.[5]

As it transpired, the suggestion that primatology was in greater danger of becoming anthropomorphic than were other areas of behavioural science became a constant theme in the history of the discipline. From the Royal Society's rejection in the 1960s of Jane Goodall's early papers, on the grounds that they referred to chimpanzees as 'he' and 'she' rather than 'it'

PROOF ONLY

07-Rees-077368.qxd 3/15/2007 7:32 PM Page 3

(Montgomery, 1991), to the key role played by primatology and primatologists in the vehemently contested new discipline of cognitive ethology at the close of the century,[6] there was a rarely voiced but often visible fear that primatology was in danger of transgressing the anthropomorphic boundary, of breaking down the fundamental Western distinction between 'nature' and 'society'. It is therefore ironic that primatologists have also consistently been more willing than members of other disciplines to provide accounts of their lives and work in magazines, books and TV documentaries,[7] and also to become seriously involved in the debates about the sociology and history of science (Latour & Strum, 1986; Bekoff & Allen, 1997; Quiatt, 1997; Strum & Fedigan, 2000). The latter was no mean achievement during the 'Science Wars' of the late 20th century.[8]

Despite the potential risks to their authors' scientific reputations, with the inauguration of the 'second wave' of field studies in the post-war period, a steady stream of such public stories about the primatological life have been produced alongside peer-reviewed reports.[9] They are deeply engaging and absorbing narratives, which firmly situate the research results within the processes through which they were achieved, describing how researchers were able to gain access to the primates in the first place, the physical and emotional stresses caused by their physical distance from familiar comforts, as well as the frustration and exhilaration of acquiring the necessary skills and practices for field work which differ profoundly from those of the laboratory. At the heart of such accounts, however, stand the primates themselves. What characterizes these narratives, and distinguishes them from the research reports, is not just their description of the context of scientific production, but also their depiction of the animals at the heart of the research process. All of these texts treat the animals as characters, as individuals with lives, feelings, histories and motives of their own.

It is always possible to condemn such accounts for being anthropomorphic, or for being popularizations in the worst sense: providing highly coloured, overly emotional, utterly subjective anecdotes; exaggerating the unusual at the expense of the habitual; and emphasizing the humanly familiar to the detriment of the scientifically relevant.[10] However, doing so overlooks a number of key questions. In the first place, why should primatologists want to produce such accounts in the first place, if they bear no resemblance to their field experience? Of all people, they should be aware of the danger to their reputations and future careers posed by anthropomorphism (Rees, 2001b). In the second, of what use might these publications have for the history and the sociology of science, both in terms of what they tell the public about primate behaviour and their descriptions of the conduct of scientific research in the field? This paper will provide some answers to these questions.

For purposes of this study, I examined 11 popular accounts based on behavioural primatological research, published between 1964 and 2002.[11] They were written by both men and women, and describe gorillas, chimpanzees, orang-utans, baboons and muriquis. Primarily, I chose them because book length accounts of field research provide broader analytic

PROOF ONLY

07-Rees-077368.qxd 3/15/2007 7:32 PM Page 4

scope and textual context than that offered by magazine articles and documentaries. Their publication dates span the modern period of primatological research, and so they allow us to see how such research may have changed during that time.[12] It should be noted, however, that they do *not* cover the full range of primatological research during that period. Overwhelmingly, they concentrate on animals – the African great apes and the baboons – considered most likely to represent potential models for human experience.[13] Although such studies originally concentrated on African apes and monkeys, over the next 40 years researchers took increasing interest in other continents and species. My selection reflects the fact that popular accounts of primatological research still tend to concentrate on the larger, more easily observable, terrestrial primates.[14]

One clearly evident feature of these texts is that they present primatological field research as though it depended on an explicit and active management of the relationship between observer and observed. Relationships are, by definition, two-way processes requiring both parties to contribute to their maintenance, but how can a relationship exist in which only one element is human, and is considered, a priori, to be capable of the reflexivity, empathy and motivation fundamental to mutual interaction? In my analysis of the texts, I will consider the possibility that the *assumption* that human researchers and their primate subjects have a genuine relationship was central to the success of primate research in the field. Ironically, this assumption may have originated from the research methodologies adopted. In particular, strategies such as the individual identification of group members, the habituation of animals to human presence, and the efforts to observe 'natural' behaviour were central to this process.

Observation or Intervention?

Researchers who conducted the earliest studies of free-living primates in the post-war years came from many different countries and were trained in several different disciplines.[15] Their disparate origins meant that there was no immediate consensus on appropriate field theoretical and methodological strategies. By the end of the 1960s, several international primatology conferences and journals had been organized and established, providing the new discipline with institutional grounding and affording forums through which its practitioners could announce their discoveries and present their observations.[16] These forums were dominated by the question of how to observe the behaviour of free-living primates without influencing it. This fundamental focus on *natural* behaviour raised the question of what counted as 'natural'. If researchers fed the animals to help maintain their observability, did they interfere with or bias the animals' natural behaviour? How could one be sure that spectacular, eye-catching behaviours did not receive disproportionate attention, compared with more routine behaviours such as feeding and grooming? While no group of animals could really be considered to be 'pristine', in the sense that their behaviour and ecology was untouched by human influence, arguments put forward in these early

07-Rees-077368.qxd 3/15/2007 7:32 PM Page 5

volumes made it clear that the primary object of field research was to ensure that the observer affected the behaviour of the animals as little as possible while still managing to observe interactions and record data that would be acceptable as quantitative science rather than descriptive natural history.[17]

This position was not reached easily or unanimously. In these early years, a number of researchers argued for, and carried out, direct interventions with the animals. They did so through experimental manipulations of diet, environment or social structure, and considered strategies for the export of laboratory techniques to the field.[18] However, during the next 20 years, the interventionist approach stagnated,[19] as practitioners became deeply concerned with minimizing their impact. Rather than risk disturbing 'natural' animal behaviour, primatologists developed non-invasive sampling methods in the interest of objective, reliable data and cross-site comparisons.[20] By the late 1980s, these methods had crystallized into two main techniques: focal animal sampling and instantaneous sampling. Primatology's progress from descriptive natural history to quantitative, comparative science was attributed to 'means which are non-manipulative and are therefore less likely to alter or destroy the social system that is being studied' (Altmann, 1974: 231). Evidently, avoiding potential interference with behaviour under investigation was a question of serious and abiding concern.

Popular accounts that describe direct interventions express similar reservations. Robert Sapolsky, whose research on the relationship between stress-induced disease and behaviour was physiological as much as behavioural, had to anaesthetize his baboons in order to take biological samples that could be correlated with their social situation. He had to do it without the animals noticing, because 'you can't dart someone if he knows it's coming. If I'm trying to see what stress hormone levels in the bloodstream are like under normal unstressed resting conditions, I have to get the baboons when they are quiet, unsuspecting. I must sneak up on them' (Sapolsky, 2001: 38). In such a case, the animals must be unaware of the intervention until it occurs, or else the results will be invalid. In contrast, Hans Kummer (1995: 121, 151–52) conducted a number of successful social experiments on his baboon troop[21] that he later regretted because of their disruption of the animals' lives. Shirley Strum (2001 [1987]), having determined to 'leave [the baboons] "natural"' (p. 198), then had to face the consequences of intervention. Animals whose lives she affected – an infant rescued from drowning, perhaps – must become 'officially dead as far as our project records were concerned, as well as in any of the analyses where such an incident could make a difference in the conclusions' (p. 171).

The popular accounts thus reflect the hopeful ambivalence towards experimentation and intervention expressed in the peer-reviewed texts. Accordingly, while intervention remains theoretically possible in the field, such techniques must be used with caution, precisely because they involve direct interference and manipulation.[22] Ideally, the researcher should remain detached from the animals' lives. However, as the next section of this paper argues, the conduct of research as presented in these texts made adherence to this principle extremely difficult to maintain. Earlier, it was

PROOF ONLY

07-Rees-077368.qxd 3/15/2007 7:32 PM Page 6

noted that the development of more sophisticated sampling methodologies had played an important role in shifting primate field studies from description to comparative analysis – but what is frequently taken-for-granted in journal papers is that the use of these methodologies depended upon the successful accomplishment of two initial tasks: the habituation and individual identification of animals in the study group. The ability to approach the animals without frightening them, and to recognize troop members at a glance, is described in detail in the popular accounts. These were not simple mechanical tasks: they required continual management of the self in contexts of interaction. And one of the reasons these texts are so compelling is that they consistently demonstrate how habituation and individualization intensified throughout the research period. In many ways, these two methodological techniques can be considered as a source of the deeply personalized relationships between the human and non-human primates that the texts present.

Knowing Me, Knowing You

In textbook discussions of field methodology, the importance of these two processes is made clear, but rarely elaborated.[23] These two techniques are central to research, since the first thing the primatologists must do is to 'locate subjects, habituate them to the presence of humans without disrupting their natural behaviour, distinguish one group from the other, and, if possible, learn to recognize animals individually', and until this is done, the 'scientific' phase of research – the systematic sampling of behaviour – cannot begin (Cheney et al., 1987: 5).[24] However, while their importance is stressed, there is little if any discussion of particular procedures or techniques, nor is there any consideration of the potential consequences. In contrast, the popular texts devote considerable attention to how researchers familiarize themselves with their research subjects. What also becomes evident from these accounts is the extent to which habituation and individual identification were pursued with an eye to maintaining boundaries between the human and non-human primates at the research site.

A potential contradiction is evident between the researcher's goal of physically integrating with the group and being treated by the other primates as 'just' another animal, and that of producing accounts of 'natural' behaviour unaffected by human interference. The observer in these texts hoped to become an expected part of the animal groups' landscape, but still a part of the group's *social* landscape – not a rock, or tree, or an invisible monitor, but another organism, whose movements must be attended to and apprehended. These texts present successful habituation as having been achieved when the observed animals show no adverse reaction to the constant presence of the observer. The observer is *not* treated as a neutral element, but as a known actor within the group whose movements are, for the most part, predictable and unthreatening. But at the same time, in line with the professional literature, these popular accounts repeatedly stress the importance of *not* interacting with the animals. The researcher must get as close as physically possible,

PROOF ONLY

07-Rees-077368.qxd 3/15/2007 7:32 PM Page 7

but still maintain emotional and social distance, and the difficulty of maintaining one's irrelevance becomes a constant theme.[25] Strum (2001 [1987]: 57) recollects that 'the most difficult aspect of fieldwork was adhering to my policy of not interacting with the animals. It took tremendous determination not to communicate with my subjects.' Smuts (1999 [1985]: 27) agrees that you need to be 'as uninteresting as possible', but emphasizes that 'ignoring the juveniles' invitations to play and acting blasé when confronted with a charging male required discipline'. Weber & Vedder (2001: 51) admit that they were tempted to play with the gorillas, but stress that to leave a 'role as observer to become a member of the group would alter the gorillas' behaviour and undermine [the] research in the process'. Strier (1992: xvi–xvii) describes how it took all of her 'scientific training and willpower to resist the temptation – and the clear invitation' to return an offered hug from her monkeys; she 'could not touch them now and still hope to remain the passive observer'. And Robert Sapolsky (2001: 222) argues that Dian Fossey did 'little science of note', not least because she 'broke all the objective rules about not touching them, not interacting with them'. For the most part, the other authors manage to maintain an ambivalent position that enables them to remain physically within the group, while being socially marginal, but they eloquently express the strain imposed by sustaining that position at the group's boundary.

A key strategy for achieving physical presence in the group is by imitating the actions and vocalizations of the animals – aping the monkeys, if you will. Ironically, at least two of the authors adopted the animals' signals in order to try to communicate their unwillingness to interact. Shirley Strum (2001 [1987]: 58) recalls using 'the usual baboon brush-off technique' to discourage persistent attempts to communicate, and Hans Kummer remembers using social signals he had identified among the baboons of Zurich Zoo as a means of protecting himself in the field in Ethiopia (1995: 40).[26] Attempts to copy the animals, to act as if one were just one of the group, go well beyond such signals, however. Researchers describe imitating facial expressions and using the vocalizations of the animals to allow them to come closer: for example, Fossey identifies one of the more common gorilla sounds – the belch vocalization – that provokes all nearby animals into replying with a similar sound. Thus, the 'sound serves as the perfect communication for humans to imitate when initiating contacts with gorilla groups … By its use, I can inform the animals of my presence and allay any apprehensions they might have' (Fossey, 1983: 53–54). Finally, researchers emulate the diet of the animals, learning to prepare foods in the same way. Strum (2001 [1987]: 56) at one point pockets a sample of fruit to try later, without realizing that the baboons were careful to roll it on the ground first in order to remove its painful spines. As she says, recalling her discomfort, 'I should have watched the baboons more closely.' The animals are presented in these pages as the knowledgeable actors, and even instructors, with necessary skills for surviving in the particular environment, skills that must be learnt by the researchers both as quasi-group members and as scientists.

07-Rees-077368.qxd 3/15/2007 7:32 PM Page 8

The social skills and judgements of the animals are also placed at centre-stage when the authors stress the extent to which habituation is a two-way process. Habituation would not occur if the animals did not possess the 'ability to recognise people individually' (Smuts, 1999 [1985]: 28), especially people with binoculars and clipboards. Strier (1992: 80, 38) argues that although today 'the muriquis have stopped distinguishing between humans', at an earlier time they 'were studying me as carefully as I was studying them'. Schaller (1964: 135) describes how he used the fact that he felt that the 'gorillas talked to [him] at times with their expressive eyes' to assess their willingness to be observed. He also warns other field researchers of the dangers of using binoculars and cameras: because they look like hugely magnified, unblinking eyes, the animals may regard them as a threat (Schaller, 1964: 128). Reynolds (1965: 46) similarly refers to his unsettled feeling that the chimps were watching him, and speaks of the 'awful knowledge that a chimp was looking straight back down one's binoculars into one's eyes, a stomach-churning reversal of the field-worker's intentions'. Indeed, for the researchers portrayed in these texts, at least part of their difficulty with maintaining distance and avoiding direct engagement is explained by the unquenchable interest the animals show towards the humans' activities.

When Animals Interact!

All of these texts describe how the animals' interest and awareness can have a significant impact on the research. In some cases, the researchers acknowledge feeling that the animals actively resented being observed. For example, when describing one of the first contacts made with the chimps of Budongo, Reynolds (1965: 38–39) recalls acute awareness of their hostility, 'closing in' on him 'as if they were working themselves up into a frenzy … with a kind of mob anger', forcing him to beat a hasty retreat. Less spectacularly, Weber & Vedder (2001: 48) describe the initial reaction of the gorillas to an intruding human: 'Their displeasure was generally limited to cough grunts – gruff-sounding coughs directed at the offending party and intended as a warning to stop.' Sapolsky (2001: 38) gives a vivid picture of trying to act innocuously in front of a baboon: 'Shit, shit, he's moved again, reposition, control your breath, he's looking straight at you now, act nonchalant, how the hell do you act nonchalant in front of a baboon, anyway?' The animals are not being portrayed as research *objects*, but as *subjects*, whose subjectivity, motivations and reactions must be taken into account in developing research strategies.

In other examples, the authors describe apparent attempts by the animals to actively engage their attention, but which evoke responses that go beyond the earlier descriptions of avoiding interaction in the name of scientific objectivity. These instances approach what Kummer (1995: 82) calls 'the zoologist's dream of being accepted by wild animals … the pleasure of being regarded as a conspecific by his animals'. Researchers describe these encounters as situations in which they appear to be treated

PROOF ONLY

07-Rees-077368.qxd 3/15/2007 7:32 PM Page 9

as bonafide members of the social group. For example, Strum describes being involved in an altercation between two males. Suddenly, she realises that 'Ray wasn't threatening me; he was soliciting my help. He wanted me to support him against the other males! … I badly wanted to help him, but I couldn't. I signalled this by turning away completely' (Strum, 2001 [1987]: 32). Similarly, Sapolsky (2001: 98–99) describes how one baboon, threatened by another, had 'a moment of desperate inspiration [and] turned to me and solicited my partnership [against another male]. In the name of all my professional training and objectivity, but to my perpetual shame, I had to pretend I didn't know what he was talking about.' Kummer (1995: 87) suggests that the 'baboons seemed to exploit the advantage of their relationship with us when they confronted a hostile tribe of conspecifics. Then they closed ranks, not just anywhere, but around "their" observer.' Strier even found that 'her' monkeys were prepared to protect her against harassment from a member of another group. Very early in her study, a strange male from another group of muriquis threatened her. Then, '[s]econds later, the females charged towards the male and began to threaten him! The Jaó male froze as if he too had expected a very different reaction' (Strier, 1992: xvi–xvii). Clearly, the authors treat these events as immensely significant, not least because they demonstrate impressive success in their task of habituating the animals. Additionally, however, they enable the authors to present the animals as able to grant such acceptance: these accounts emphasize the animals' capacity to recognize a human as a member of their own community.

Identifying Individuals

The methodological rules of the game (whether or not the animals obey them) state that interaction between observer and observed is inappropriate because it will damage, if not destroy, the object of the scientific study: the 'natural' behaviour of wild animals. But the twin strategies of habituation and individual identification create a situation in which a certain level of – carefully managed – interaction between observer and observed is not just inevitable, but essential to the research process. It is clear from these popular accounts that when animals have been individually identified, it becomes possible to give them life histories, to treat them as unique characters, and to record their biographies and histories in order to interpret their lives for an alien, urbanized, Western audience.

Such identification is reflected in the way that the authors frequently compare themselves to anthropologists and historians.[27] For example, Irven DeVore (1999 [1985]: xxx) argues that Smuts' work was successful not least because she respected 'her subjects by approaching them with the open mind of the ethnographer and immersing herself in the complexities of baboon social life', enabling her 'to shift the baboons well along the continuum from "subject" to "informant"'. Smuts (1999 [1985]: 30) confirms this when she recalls that she began 'by trying to adopt the attitude of an ethnographer confronted with a previously undescribed society'. Kummer

PROOF ONLY

07-Rees-077368.qxd 3/15/2007 7:32 PM Page 10

(1995: 85) says he approached his baboons openly because such an approach 'is based on politeness and respect. An ethnologist trying to study a human tribal community from hiding places, using night vision apparatus and concealed microphones, would seem boorish to a Westerner.' He states that the hamadryas baboons 'found their biographer' in him, that he must learn 'hamadryish', in order to '[write] down what the hamadryas told us' (Kummer, 1995: 23, 27, 22). Similarly, Jane Goodall (1990: 198) acknowledges feeling that she 'has been privileged … to compile the history of a group of beings who have no written language of their own'.

Another revealing metaphor used time and again by the authors is that of the soap opera: the ongoing, engrossing daily drama of social life, populated by characters intended to appeal, appal or intimidate. Smuts (1999 [1985]: 8) admits that her research 'often took on a very different character due to the powerful influence of my subjects – the baboons. Many primate field workers compare their jobs to watching soap operas, except that the characters are real and do not speak.' Similarly, Strier (1992: 82–83) argues that '[f]ollowing the muriquis' life histories is like following a soap opera, because just as in humans, each individual's life history is unique'. Strum (2001 [1987]: 296) gives a vivid description of watching the baboons while 'the early morning soap opera plays on', and explains that the scavenging baboons were initially welcomed by the inhabitants of the local army base because '[t]here weren't many diversions at the army camp, and the baboons filled the place of a good TV show' (p. 204). And the characters are given names: every account except that of Reynolds[28] refers to the animals by using their personal names, but as Sapolsky (2001: 14) says, these names are unlikely to appear in the professional journals – 'everyone got a number then'.

The possibility that this metaphor is grounded on actual field experience is suggested by the way that the character of each animal is described, not as an example of an age/sex class, but as a distinctive personality, with unique memories and motivations. Sometimes individuals are described in relation to their respective social ranks, as when Sapolsky compares the temperaments of two babies produced by high-ranking Devorah and low ranking Miriam, or when Goodall describes the mothering skills of Flo and Fifi, or when Strum contrasts the personalities of Peggy and Thea, successive highest-ranked females. Weber & Vedder (2001: 49) use the examples of two very different infants to illustrate 'the role of personality in gorilla development', and assert that their research plans depend on the 'personalities' of the gorillas (p. 34). And the authors argue that the animals themselves recognize each other as individuals. So, for Smuts (1999 [1985]: vii), relationships within the troop change as 'each baboon goes through different phases of life and matures into an ever-more idiosyncratic individual', and she adds that 'baboons form *personal* relationships just as we do, and that what makes these relationships personal is that individual identities matter' (p. xv). Similarly, Kummer (1995: 37) stresses that 'primates – monkeys and apes – treat each other as individuals and not as interchangeable members of a class'.

PROOF ONLY

07-Rees-077368.qxd 3/15/2007 7:32 PM Page 11

Not only do the researchers write about the animals as individual characters, but those who worked at long-term field sites elaborate upon their individual histories. The rise of such sites has enabled researchers to chronicle complete life histories of individuals. So, for example, Strier (1992: 77) describes a transitional moment when her students 'looked at [her] in surprised understanding: this was not simply an embrace between an adult male and female; this was an embrace between a nine year old adult male and his mother'. When a young male muriqui approaches her, she remembers: 'I have known Nilo since 1982 … [h]e has, after all, grown up in my presence' (p. 82). For her, it is the process of documenting 'changes in the group over the past decade', which is fundamental to changing the research focus 'from its original snapshot of a year in the lives of these monkeys to a video that reveals each individual's life history' (p. xviii). When such histories are not known (as in the case where unknown animals have transferred into the group) they can be a source of both speculation and irritation. Sapolsky (2001: 173) describes how he would 'look at these two ancient animals, and you'd have to wonder, who were they, what are their stories? What part of the Serengeti did Limp terrorize years ago? Did drooly old feeble Gums ever kill anyone in a fight?' In fact, the irritation of not knowing strangers clearly shows of the importance knowing individual animal histories. Weber & Vedder (2001: 349), for example, describe what it was like to visit Visoke years after their study there had finished, and to see a group of unknown gorillas: '[i]t was like walking into a roomful of people that she didn't know'. Here, the immense significance of long-term field sites for primatological research (Rees, 2006) is reflected in the way researchers present their recollections of individual primates.

Identifying with *Individuals*

As noted earlier, researchers associate interaction with individual primates with the danger of distorting observations of natural behaviour. However, strong emotional and empathic identification with the animals is consistently evident in their popular writings. At one level, they represent such identification as an instinctive response: since human and non-human primates are so closely related, events and situations are liable to evoke similar responses. So, for example, when a new mother drops her infant from a tree, Sapolsky (2001: 240) describes how the 'various primates observing proved our close kinship … by doing the exact same thing in unison. Five female baboons in the tree, and this one human all gasped as one. And then fell silent, eyes trained on the kid.' Kummer (1995: 26) acknowledges that the alarm calls of the females and juveniles 'set off an internal alarm trying to convince me that something dreadful was happening. The reason was that I am a primate, like the baboons, and we share this signal.' Strum (2001 [1987]: 34) recalls the way in which 'the aggressive signals Sumner and Ray exchanged had a powerful effect on me, my humanness and scientific objectivity not withstanding … the adrenaline surged through my blood as if I had been physically involved'. In these passages, the authors

PROOF ONLY

07-Rees-077368.qxd 3/15/2007 7:32 PM Page 12

use the physiological similarities between human and non-human primates both to demonstrate their own sense of instinctive connection with the animals and to invite readers to participate in such identification.

At a much deeper level are vivid examples of more reflective or empathetic responses. For example, Sapolsky (2001: 117) watches a female baboon ignoring the advances of a male: 'Let him sit near you, I thought with irritation … I was angry with her.' Strum (2001 [1987]: 64–65, 126) admits that the 'deaths and injuries among the baboons aroused feelings of sadness and pity – human emotions – in me', and actively attempts to use her own empathy to understand the course of an interaction, asking 'Wouldn't *I* respond differently to someone who seemed relaxed and confident, rather than overcome by fear?' The experience of a deeply personal and emotional relationship with the animals is perhaps most evident in the writings of Goodall, Galdikas and Fossey.[29] Galdikas (1995: 344) claims that Akmad, one of the captive orang-utans that she had successfully released back into the jungle, 'treats [her] exactly the same way wild orang-utan [sic] daughters treat their mothers'. Goodall's (1990) deep empathy with the individual chimpanzees from more than years of research at Gombe is repeatedly reinforced. She pities the unhappy life experienced by Gilka, is appalled by the killing of the Kahama chimpanzees by the Kasekela males ('Sniff was brutally murdered like the others' [p. 91]), hates Passion who killed and ate the infants of other females ('gorging on the flesh of Gilka's baby, her mouth smeared with blood' [p. 92]). Fossey's book abounds with references to the emotions she perceives in the gorillas and the feelings they provoke in her. For example, when one gorilla was killed by poachers, she 'tried not to allow [herself] to think of Digit's anguish, pain and the total comprehension he must have suffered in knowing what humans were doing to him' (Fossey, 1983: 206).

It might seem that Fossey's strong emotional responses to the animals accounts for her scientific marginalization, but the other popular accounts clearly demonstrate that she is not alone in developing such attachments. Sapolsky also experienced the death of his animals, when his study group became infected with tuberculosis. After this discovery, he 'spent the day with the baboons, my first quiet observational day with them in too long. I followed them, took distracted, mediocre behavioural data, sang to them and felt near tears' (Sapolsky, 2001: 291). When the baboons died, he buried them, like Fossey with her gorillas. Having learnt his lesson, he explains that with his new study troop, 'each year I do less behavioural observation on them and more physiology, in part so that I will not know them enough to get attached' (p. 302). It might be suggested that these powerful emotional responses made it possible for fieldwork to continue in difficult and strenuous circumstances. For example, Strum (2001 [1987]: 55) says that simply 'being with [the baboons] satisfied most of my social needs', and Strier (1992: 40) claims that 'the lack of human company never seemed so oppressive when I was with the muriquis'. Both Strum (2001 [1987]: 172) and Kummer (1995: 37, 324) describe dreaming about their animals. Carrying out research in the field is hard, lonely and strenuous: it

PROOF ONLY

07-Rees-077368.qxd 3/15/2007 7:32 PM Page 13

would seem that to some extent, of the researcher's sense of participating in the social life of the group not only provides consolation, but also forms a kind of barrier against social isolation.

Not only do the animals clearly play an active role in the inner lives of the researchers, but the researchers also describe the inner lives of the animals themselves. Emotion again figures strongly here: Sapolsky (2001: 20) wonders whether Obediah is experiencing 'the nonhuman equivalent of the excruciating embarrassment kids feel when parents prove how lame they are', while Kummer (1995: 39) argues that a 'frightened baboon not only strives to escape the external danger of bodily injury, it also tries to regain its inner equilibrium, which may be an even more urgent need'. While transporting two adult males in the same cage, he was 'convinced that each of them could sense how dangerous the situation was' (p. 169). Researchers also discuss the possibility that their animals experience more positive sensations. In one case, Smuts (1999 [1985]: xii) is emphatically 'certain these two baboons loved each other', and is willing to speculate on the role of affection in the maintenance of personal relationships between animals (p. 61). In a similar fashion, Strum (2001 [1987]) tries to identify familial relationships by assessing the emotional tone of the interactions between individuals.

The texts also describe the apparent ability of the animals to manipulate the emotions of others and to act in a way that implies their capacity to remember previous encounters. Smuts (1999 [1985]: 96) argues that seemingly unprovoked attacks by males on females can be explained by reference to previous events: that they are responses to 'specific acts by the victim that the attacker observed and remembered; it is the observer who does not know the reason for the male's behaviour, not the baboons'. She warns readers that her speculations 'should be regarded as hypotheses that require further evaluation' (p. 170), but that nonetheless, she 'had the impression that Lysistrata purposefully timed her run-away response in order to increase the chances of a consort turnover' (p. 179). While such speculations would be firmly debarred from the professional journals, the authors justify their inclusion in popular accounts by asserting that they have a crucial role for future research.

Analytical Anthropomorphism

Historically, behavioural researchers treated anthropomorphism as an ever-present danger, both in the conduct of research and its eventual reception. However, for several of the authors discussed here, a certain level of anthropomorphic thinking is presented as centrally important to field research. By now, it should be clear that these researchers portray themselves, not as simple observers of their primate subjects, but active participants in relationships with them. In any number of different ways, from the speculation about the mental lives of non-verbal primates, to the irritation of watching a focal animal subject bound off into a thicket where it cannot be followed (Sapolsky, 2001: 65), it is clear that a crucial aspect of life in the

PROOF ONLY

07-Rees-077368.qxd 3/15/2007 7:32 PM Page 14

field as presented in these texts is this sense of direct interaction with sentient beings. But again, as I have stressed, this sense of interaction is carefully managed, not least in relation to the emergence of cognitive ethology in recent decades as a means to investigate the evolution of animal mind.[30]

Clearly, one way of managing this response is to point out how valuable careful anthropomorphism can be in field research. Schaller (1964: 194–95) argues that 'something vital in our understanding of animals is lost if we fail to interpret their behaviour in human terms, although it must be done cautiously', quoting Julian Huxley's assertion that it is 'both scientifically legitimate and operationally necessary to ascribe mind, in the sense of subjective awareness, to higher animals'. Strum (2001 [1987]: 153) criticizes earlier accounts for being too anthropomorphic, but as her research progresses, she acknowledges being 'constantly struck by how much more like humans the baboons now seemed', stressing that it was the experience of doing field research that had changed her mind: 'it was the baboons themselves that were responsible for my change of heart' (p. 153). Smuts is intensely critical of how the fear of anthropomorphism 'has often led students in animal behaviour to shy away from intriguing and important questions', and to the 'loss of knowledge of the forces that give animals personality and vitality … This seems a large price to pay for the certainty and safety of "objective knowledge"' (Smuts, 1999 [1985]: 211). For her, Goodall and Fossey, far from being hopelessly anthropomorphic, produce exemplary research 'that makes other animals come alive as individuals, with whom we could in principle have a personal relationship' (Smuts, 1999 [1985]: xv). This, she argues, is vital, because only by producing more such work will it be possible to raise public awareness of the importance of conservation, animal welfare and environmental programmes.

Similar calls for greater scientific involvement in raising public awareness, not just of the results but of the *process* of doing research, are made in a number of the other texts. Kummer (1995: xvi–xvii) admits that research reports in technical journals are 'often without appeal, an insipid broth abstracted from the bare bones of some investigation'. He claims that his book will 'do something that behavioural scientists don't ordinarily do, and may even be discouraged from doing'; it will describe the context of research, so that those 'who paid for our research and experiences without being able to be there with us' (p. xvii) can share in it. Similarly, Strier (1992: xvii–xviii) is certain that 'data alone do not convey what the day-to-day experience of accompanying muriquis has been like … it is the stories about the monkeys and the progress of the research that provide an essential context for the scientific findings', and, like Smuts (1999 [1985]: 34), she wants to allow the reader to 'share the dynamic interplay between quantitative analysis and more intuitive mental processes that occurs in the mind of the scientist', in order to 'convey a feeling for the process, as well as the results of the study of primate behaviour' (p. 9). Such attitudes are interesting, given efforts made by programmes for the public understanding of science to switch the focus from the dissemination of scientific information towards the process of producing such knowledge.

PROOF ONLY

07-Rees-077368.qxd 3/15/2007 7:32 PM Page 15

Conclusion

This paper has raised two main questions about these popular primatological books: first, why were the authors willing to produce accounts of their research for non-specialist audiences, which treated their research subjects in an apparently anthropomorphic way, and second, what can the sociology and history of science learn from such popular descriptions of research in the field? The authors explicitly presented their research subjects as individual personalities, with their own histories, motives and agendas, and conveyed a powerful sense of inter-subjectivity between researcher and subject. Interestingly, such tendencies appeared to deepen over time: when one considers the texts chronologically, the primates seem to become more 'person-like' as the author accumulates knowledge of their individual histories and experiences. So what might lie behind this tendency in popularized primatological research that contrasts so starkly with the professional literature?

In the first place, as the previous section indicated, the authors express a powerful sense of frustration with constraints imposed on the professional literature. At the personal level, they argue that the professional journals do not convey a full sense of what it is like to live and work with primates in the field, and that 'speculative' anthropomorphism remains a legitimate and useful aspect of the research process. In the second place, and more interestingly as far as the public understanding of science is concerned, the authors overtly express clear political objectives with their texts. They raise concerns that majority of primate species will not survive this century unless generously funded public action is taken very soon to protect and conserve their remaining populations and habitats.[31] Perhaps this is one reason why these texts are so careful to present the animals as individuals, describing examples of distinct and dramatic personalities and detailing individualising events such as intense aggression, prolonged sexual sessions and loving nurture. The stronger the sense of kinship that can be created in the mind of the reader, the greater the likelihood that a sense of shared responsibility and of mutual participation in a moral community will also develop.[32] However, although there are clear difficulties with using textual descriptions as veridical accounts of what 'actually' happened, particularly when such descriptions are of events that took place in exotic places, it would be both unfair and inaccurate to suggest that the authors deliberately attempt to personalize the primates in order to serve political functions. Recall that the basic strategies for conducting behavioural research in the field – habituation and individual identification – were described in this paper as key resources through which primate researchers were able to observe primates. In addition to habituating primates to human observers, the researchers learned from the primates how to live and communicate with them.

So, what lessons can be learned from this textual examination for the history and sociology of science? First, the relative neglect of popular autobiographical accounts of field research is surprising, and may stem from an outdated stereotype that treats popularizations as inferior to 'real' science. While the books I examined *are* popular, in the sense that they are accessible

07-Rees-077368.qxd 3/15/2007 7:32 PM Page 16

to a wide range of different readers, they still are written by *scientists* who describe their own first-hand experiences. For the last several decades, the sociology and the history of science has been concerned to investigate the *context* of scientific knowledge production, and such context is apparently what is given, in a wealth of detail, within these narratives. Examining these accounts might therefore be of great use – alongside other strategies, of course – for suggesting avenues through which our understanding of field science could be increased. In this paper, I concentrated on presentations of the primates themselves. An alternative theme to explore would be the role of suffering in these accounts – the physical and emotional stresses and strains during fieldwork that the authors recount – as a means of conveying a sense of authority and authenticity. Another might be the presentation of the role played by local people in the research process – one area where there is a clear shift of emphasis and attitude over time as the political and economic context of conducting research in the developing world changed.

Second, descriptions of field research also may have something to tell us about the nature of science studies. As noted earlier, primates were originally studied in the hope that the simpler structures of their societies would provide insight into more complex human communities. While social scientists may view that premise as mistaken, there also may be some interesting consequences to consider, especially in relation to lines that have been drawn between such categories as 'science', 'nature' and 'society'. Not only are stories of animal life frequently cited in attempts to 'normalize', or 'naturalize', different aspects of human life,[33] a strategy that deserves much more attention from those of us who are concerned with the relationship between biology and politics (Rees, 1999), but it is evident from primate field studies in the post-war period that attempts to understand and to come to terms with the relationship between categories such as 'human', 'non-human', 'nature' or 'culture' have been at the heart of theoretical and methodological debates in that field. In many ways, then, the study of primatology, its history and its public perception, demonstrates the impossibility and inadvisability of demarcating science from society. Almost two decades ago, Donna Haraway elegantly showed how thoroughly enculturated the 'natural' primate object had become: what is evident from the present study is that such enculturation not only implicates the object, it pervades the process of primatological research itself. Primatology, in its various forms, is one of the clearest demonstrations of just how complex, reflexive and reflective science studies will have to become in this millennium, as we are forced to consider in ever-greater detail our political, as well as our intellectual responsibilities.

Notes

1. For histories of geology, see Hevley (1996), Neve & Porter (1977), Porter (1978) and Rudwick (1985, 1976). For history of anthropology, see Gupta & Ferguson (1997), Kuklick (1997, 1991), Pratt (1992), Schumaker (1996) and Stocking (1983). Other examples of studies of science in the field can be found for natural history (Mitman, 1992; Nyhart, 1996). For studies of scientific expeditions, see Pang (1996) and Jardine et al. (1996).

PROOF

07-Rees-077368.qxd 3/15/2007 7:32 PM Page 17

2. See, for example, Crist (1996), Henke (2000), Kohler (2002a,b), Kuklick & Kohler (1996), Latour (1999), Roth & Bowen (1999) and Rees (2001a).
3. For example, Scott (1950: 1003) describes how the study of animal social behaviour became established in the USA in the late 1940s in the hope that this would 'remedy the deplorable lack of scientific control over destructive social phenomena such as warfare, crime and poverty'. The inclination to use animal behaviour as a means for accessing and understanding the underlying basis of human behaviour persisted throughout the latter half of the 20th century, and was not confined to debates surrounding sociobiology (Wilson, 1976; Sahlins, 1977; Rees, 1999; Segerstrale, 2000).
4. See also Mitchell et al. (1997) for a fuller account of the problematic place of anthropomorphism within different intellectual communities. Definitions of what constitutes anthropomorphism have shifted considerably over time and cross-culturally (Asquith, 1997; Radick, 2000): by the early 21st century, anthropomorphism had become a topic deemed worthy of scholarly interest (Daston & Mitman, 2006)
5. Asquith (1997) discusses the problems that arise from treating anthropomorphism as a metaphor: to describe a word as 'metaphorical' assumes that a literal meaning for it exists. The difficulty is that accounts of animal behaviour that seem anthropomorphic are often justified by the author as a matter of speaking 'metaphorically'; they are simply using a human terms in preference to a long-drawn-out description of observed events, and readers are expected to understand this implicit shorthand. However, as Asquith emphasizes, this belittles the importance of both metaphor and anthropomorphism – is there, for example, a difference between describing an animal 'biting' or 'attacking' another? Is one an example of anthropomorphic metaphor, or are they both 'literal' descriptions of an observed event?
6. 'Cognitive ethology' was a term coined by Donald Griffin (1978, 1984, 1992) to describe the study of animal thinking under naturalistic conditions. His work provoked much criticism (Humphrey, 1977; Heyes, 1987), but also encouraged the production of primatological classics such as Byrne & Whiten (1988), Cheney & Seyfarth (1990), Byrne (1995), Tomasello & Call (1997) and Whiten & Byrne (1997). For a sympathetic history of the emergence of the discipline, its defenders and critics, see Bekoff & Allan (1997), and for a stringent critique, see Kennedy (1992).
7. Other behavioural scientists, especially those working on large charismatic mammals, such as lions (Packer, 1996), elephants (Moss, 2000) and wolves (Mech, 1985), have also been willing to provide similar accounts, but they are far less numerous than those dealing explicitly with nonhuman primates. As this paper will show, however, the latter concentrate on a restricted range of primate species – specifically, on large, diurnal, semi-terrestrial primates, rather than the small, nocturnal prosimians.
8. In part, the apparent willingness to straddle academic and intellectual boundaries may be explained by the nature of primatology's institutional origins. The discipline arose out of a conjunction of interests between the natural and the social sciences, thereby ensuring that practitioners trained in natural science would gain at least some exposure to social science, and vice versa. In addition, the two disciplines that dominated the emergence of primatology in the West were anthropology and ethology, both with long traditions of giving general and reflective accounts of research practice for wider audiences (Mead, 1928; Benedict, 1946; Lorenz, 1952, 1953; Tinbergen, 1965).
9. For example, one of the books examined in this paper – *The Year of the Gorilla*, by George Schaller – appeared in 1964, the year after his academic monograph was published (Schaller, 1963), and both bore the imprint of the University of Chicago Press.
10. 'Traditional' accounts of popular science tend to fault it for a failure to resemble professional science. However, an overwhelming body of more recent research in the history and sociology of science has rejected the assumption that 'popular' science is a poor imitation of 'real' science, and has demonstrated not only that popular science writing represents a distinct genre of work in its own right, but also that the distinction between popular and professional science is problematic. See, for example, and among others, Bucchi (1996), Clemens (1986, 1994), Cooter & Pumfrey (1994), Curtis

PROOF COPY

07-Rees-077368.qxd 3/15/2007 7:32 PM Page 18

(1994), Epstein (1996, 1997), Gregory & Miller (1998), Hilgartner (1990), Lewenstein (1992, 1995), Myers (1990) and Shapin (1990).

11. See Appendix for a list of the titles and for a short précis of the context of each book's publication.
12. The time span is particularly important, both in the context of the greater scientific weight given to results emerging from field sites at which the animals have been studied for a considerable period of time (Rees, 2006), and in relation to the problem of habituation, which will be dealt with later in this paper.
13. The apes were recognized as the 'closest' human relatives even before this had been demonstrated genetically in the late 20th century. However, unlike hominids, chimps and gorillas mostly were found within forest environments: the baboons, many species of which dwelt in the open savannah, were thought to provide a model for the human 'coming down from the trees' (Washburn & DeVore, 1961; Sperling, 1991; Strum & Fedigan, 2000).
14. Two further caveats should be introduced. Since one of the key aims of this paper was to explore the portrayal of primates and primatological research in Western public cultures, the texts selected for examination were all Western in origin, despite the extremely important contribution to primatological research made by Japanese scientists (Asquith, 1986; Haraway, 1989). It is clear that the cultural status of the primate is profoundly different in non-Western societies, and that popular primatology texts perform different roles and have different meanings in such societies. Additionally, I excluded a large body of work on captive and home-raised primates (Harrison, 1962; Temerlin, 1976; Mundis, 1976; Fouts, 1997). Much of this latter work assumed that the primates in question were to be treated as if they were human infants (some were kept as pets, and others as part of a series of primate language projects – see, for example, Linden [1986] and Wallman [1992]. As noted earlier, a significant part of this paper in on problems faced by researchers who attempted to avoid humanizing the animals they studied.
15. Between 1958 and 1963, for example, the Gorilla Research Unit was established in Uganda, supported by the University of the Witwatersrand (Dart, 1960, 1961; Emlen, 1960; Tobias, 1961). It was used by a combination of American, British and South African researchers. Three different studies of chimpanzees by British and Dutch researchers (Goodall, 1962; Kortlandt, 1962; Reynolds, 1963) occurred during that period, and George Schaller (1961), an American zoologist, also made some brief observations of orang-utans. K.R.L. Hall (1960), a psychologist from the University of Bristol, began a series of baboon studies in South Africa in 1958, as had American anthropologists Sherwood Washburn and Irven DeVore (Washburn & DeVore, 1961) in East Africa. Swiss zoologist Hans Kummer (Kummer & Kurt, 1963) observed baboons in Ethiopia, and an international team of British and Indian researchers surveyed rhesus macaques in India (Southwick et al., 1961), while Stuart Altmann (1962a,b) observed monkeys on Cayo Santiago in Central America. The Japanese Monkey Centre, inspired by sociologically trained Kinji Imanishi, sent out teams in 1958 to survey Africa and South East Asia for potential primate field sites that would complement their own work on captive and provisioned Japanese macacques (Frisch, 1959).
16. For example, *Folia primatologica*, the first Western journal to devote itself to primatological research was established in 1963. *Primates*, a Japanese journal, began publication in 1957, but did not achieve wide circulation in the West until some time after it was published in English, starting in 1959) Additionally, in April 1962 three different conferences focused, for the most part, on primate behaviour: at Gissen, Germany, London and New York (Schultz, 1964).
17. For examples, see DeVore (1965), Altmann (1967), Jay (1968) and Dolhinow (1972) – especially the contributions by Carpenter, Mason, Schaller, Jay, and Hall & DeVore. It should be noted that the behaviour of *researchers* was not the only source of tension. Of particular concern was the extent to which behaviour had been affected by the expansion of human communities in the context of the increasing urbanization and globalization in the post-war years. Since the concern of many researchers was to learn more about the basis of human behaviour by studying the 'simpler' communities of the

07-Rees-077368.qxd 3/15/2007 7:32 PM Page 19

primates, communities that had been substantially and recently impacted by human development were unlikely to represent suitable research material. In some cases, the fact that animal behaviour had been modified by human influence was clear – where animals lived in close proximity to towns and villages and mingled freely with humans. What is notable about these particular examples, however, is the extent to which researchers found it necessary to argue that it was possible to treat animals found in such circumstances as true exemplars of the 'natural' behaviour of the animal. See, for example, Southwick et al. (1965), where the authors argue that the rhesus monkeys under observation have lived for so long in close proximity to humankind that this 'commensal relationship in villages, towns, temples and roadsides represents a natural relationship' (p. 158).

18. Again, examples can be found primarily in DeVore (1965), Jay (1968), and Altmann (1967). K.R.L. Hall and Adriaan Kordlandt presented animals with models of dangerous predators to observe their reactions, Clarence Ray Carpenter removed animals from baboon troops, and Hans Kummer introduced them to troops (Hall, 1962; Carpenter, 1964; Kummer et al., 1970; Jolly, 1972). Researchers frequently expressed the hope that technological advances in field equipment would further enhance intervention practices.
19. For example, in advice to neophytes published in an edited collection, the authors optimistically assert that although 'experiments were rarely used by primatologists … with suitable precautions, well-controlled field experiments can be conducted on primates without distorting their behaviour' (Cheney et al., 1987: 7). The key word here is *distorting*: the editors feel the need to explain *why* primate experimentation is rare – both because experiments are logistically difficult, and because 'behaviour will quickly be distorted if the animals interact with their observers in any way' (Cheney et al., 1987: 7).
20. A key figure in this development was Jeanne Altmann, who in 1974 published a paper in *Behaviour* that was to become one of the most influential methodological surveys in primatology (Haraway, 1990: 304). She demanded that more attention be paid to systematic sampling in order to ensure that the data collected would not be biased, would be capable of statistical testing, and would be comparable with data collected from other field sites.
21. These were 'translocation' experiments, in which baboons were trapped and released close to groups of unfamiliar animals, while the researchers monitored their reception.
22. Such unease about direct intervention does not necessarily mean that the investigations took place either in isolation or without any intervention; on the contrary, the texts describe a number of different strategies for introducing checks and limitations into the field research process. One of these is the comparative method, which, as Shirley Smuts points out is 'the nearest thing field biologists have to replication' (1999 [1985]: 17), because it involves comparing the behaviour of different groups of animals, or the behaviour of the same group of animals at different times. An alternative way to exercise physical control over the site and to facilitate following the animals is to cut trails through the vegetation, but again, a contrast can be seen between researchers who cut trails according to a randomly generated table (for example, Weber & Vedder, 2002), and those who follow the routes taken by the animals themselves (for example, Strier, 1992).
23. So, for example in two different edited collections of 'best practice' for primatologists (DeVore, 1965; Smuts, 1999 [1985]), the reader is told that before any behavioural data can be gathered, the animals must be habituated to the observer's presence: that is, they must allow the researcher to approach the group at a close enough distance to allow for observation, and they must be willing to act 'naturally' while the observer is present. In addition, the researcher must be able to identify the animals themselves, first as members of age/sex classes (adult male, adolescent female, infant, and so on), and eventually as individuals. As George Schaller puts it, '[i]ndividual recognition of animals is essential in a detailed study of social behaviour' (Schaller, 1965: 628).
24. While these techniques are central to studies of primate behaviour, it is not always possible to utilize them: arboreal or nocturnal animals, for example, are notoriously

07-Rees-077368.qxd 3/15/2007 7:32 PM Page 20

difficult to study in this way, and it is possible to acquire data on relations between groups, dietary habits, ranging behaviours and so on, without habituating the animals or identifying them as individuals.

25. Such frustration at the difficulty of reconciling the need for distance and the desire for intimacy is also recorded in methodological discussions of both ethnographic and participant observation studies in the social sciences – not excluding STS research. Conversely, it is also the case that researchers in the social sciences have drawn comparisons between their work and that of the ethologists. I am indebted to Michael Lynch for these observations.
26. See also Smuts (2001) for a more detailed and reflexive account of the way in which the sense of being treated as a social actor influenced the work she did with the baboons.
27. As noted earlier, anthropology was one of the most important parent disciplines of primatology, but not all of these authors came from anthropology departments. Contributors to Strum and Fedigan's (2000) collection discuss the different disciplinary trajectories of primatologists and their potential consequences for primatology in different countries. See also notes 8 and 15 for more detail on the origins of primatologists.
28. It should be noted that Reynolds also was the only author who was unable to habituate the animals to any degree – probably as a result of the sheer density of the forest in which he observed the chimpanzees, and the brief duration of his study. His account of the animals, however, echoes those of the others in the attribution of motives and emotions – even though from his perspective, the results were negative.
29. All three of these women were sent to the field to study the great apes by Louis Leakey, and are sometimes referred to as the 'trimates'. All three were largely inexperienced observers of animal behaviour, and Goodall has asserted that her very lack of experience made her a desirable observer in Leakey's eyes, because of her lack of preconceived notions. All three became the subject of controversies, and also became quasi-heroic animal saviours in the eyes of some – having crossed the boundary from animal observers to animal advocates.
30. Anthropomorphism has become a topic of scholarly interest in its own right, perhaps because of the sharply increased interest in the history and sociology of human/animal relationships, or perhaps even because of books like those discussed here. See, for example, Haraway (2003), Henninger-Voss (2002) and Wolch & Emel (1998).
31. Many of the books, in fact, close with a list of addresses to which concerned readers can write, or charities to which they can make donations in support of primate conservation.
32. Similarly, Greg Mitman argues (2006) that the shift from population to individual was responsible for the decision to define elephants as an endangered species. Statistics that attempted to demonstrate the threat to elephant populations had less impact than the pictures and histories of individual elephants.
33. For example, in September 2005, the French-made film *March of the Penguins* was hailed by the American religious right as a paean to family values, affirming the 'naturalness' of the nuclear family, monogamy and the Christian spirit. It might be noted that in response, an executive of the company responsible for the film's distribution suggested that 'They're just birds' (*Observer* leader, 15 September 2005)

References

Altmann, Stuart (ed.) (1967) *Social Communication Among Primates* (Chicago, IL: University of Chicago Press).

Altmann, Jeanne (1974) 'Observational Studies of Behaviour: Sampling Methods', *Behaviour* 49: 227–65.

Altmann, S. (1962a) 'A Field Study of the Sociobiology of Rhesus Monkeys', *Annals of the New York Academy of Sciences* 12: 338–435.

Altmann, S. (1962b) 'Social Behaviour of Anthropoid Primates: Analysis of Recent Concepts', in E.L. Bliss (ed.), *Roots of Behaviour: Genetics, Instinct and Socialisation in Animal Behaviour* (New York: Harper & Brothers): 277–285.

PROOF ONLY

07-Rees-077368.qxd 3/15/2007 7:32 PM Page 21

Asquith, Pamela (1986) 'Anthropomorphism and the Japanese and Western Traditions in Primatology', in J.G. Else & P.C. Lee (eds), *Primate Ontogeny, Cognition and Social Behaviour* (Cambridge: Cambridge University Press): 61–71.

Asquith, Pamela (1997) 'Why Anthropomorphism is not Metaphor', in R.W. Mitchell, N.S. Thompson & H.L. Miles (eds), *Anthropomorphism, Anecdotes and Animals* (Albany, NY: SUNY Press): 22–34.

Bekoff, Mark & Colin Allen (1997) 'Cognitive Ethology', in R.W. Mitchell, N.S. Thompson & H.L. Miles (eds), *Anthropomorphism, Anecdotes and Animals* (Albany, NY: SUNY Press): 313–34.

Benedict, Ruth (1946) *The Chrysanthemum and the Sword* (Boston, MA: Houghton Mifflen).

Bucchi, Massimiano (1996) 'When Scientists Turn to the Public: Alternative Routes in Science Communication', *Public Understanding of Science* 5: 375–94.

Byrne, Richard (1995) *The Thinking Ape – Evolutionary Origins of Intelligence* (Oxford: Oxford University Press).

Byrne, Richard & Andrew Whiten (1988) *Machiavellian Intelligence: Social Expertise and the Evolution of Intellect in Monkeys, Apes and Humans* (Oxford: Oxford University Press).

Campbell, Bob (2000) *The Taming of the Gorillas* (London: Minerva Press).

Carpenter, Clarence Ray (1934) 'A Field Study of the Behaviour and Social Relationships of the Howling Monkeys (*Alouatta palliata*)', *Comparative Psychological Monographs* 10(2): 1–16.

Carpenter, Clarence Ray (1964) *Naturalistic Behavior of Non-human Primates* (University Park, PA: Pennsylvania State University Press).

Cheney, Dorothy & Robert Seyfarth (1990) *How Monkeys See the World: Inside the Mind of Another Species* (Chicago, IL: University of Chicago Press).

Cheney, Dorothy, Robert Seyfarth, Barbara Smuts & Richard Wrangham (1987) 'The Study of Primate Societies', in B. Smut, D. Cheney, R. Seyfarth & R. Wrangham (eds), *Primate Societies* (Chicago, IL: University of Chicago Press): 1–8.

Clemens, Elizabeth (1986) 'Of Asteroids and Dinosaurs: The Role of the Press in the Shaping of Scientific Debate', *Social Studies of Science* 16: 421–56.

Clemens, Elizabeth (1994) 'The Impact Hypothesis and Popular Science: Conditions and Consequences of Interdisciplinary Debate', in William Glen (ed.), *The Mass Extinction Debates: How Science Works in a Crisis* (Stanford, CA: Stanford University Press).

Cooter, Roger & Stephen Pumfrey (1994) 'Separate Spheres and Public Places: Reflections on the History of Science Popularisation and Science in Popular Culture', *History of Science* 32: 237–67.

Crist, Eileen (1996) 'Naturalists' Portrayals of Animal Life: Engaging the Verstehen Approach', *Social Studies of Science* 26: 799–838.

Curtis, Ron (1994) 'Narrative Form and Normative Force: Baconian Story-telling in Science', *Social Studies of Science* 24: 419–61.

Dart, Raymond A. (1960) 'Can the Mountain Gorilla be Saved?', *Current Anthropology* 1: 330–31.

Dart, Raymond A. (1961) 'The Kisoro Pattern of Mountain Gorilla Preservation'. *Current Anthropology* 2: 510–11.

Daston, Lorraine & Greg Mitman (eds) (2006) *Thinking with Animals: New Perspectives on Anthropomorphism* (New York: Columbia University Press).

DeVore, Irven (1999 [1985]) 'Foreword', in B. Smuts, *Sex and Friendship in Baboons* (Cambridge MA: Harvard University Press): xxix–xxxi.

DeVore, Irven (ed.) (1965) *Primate Behavior: Field Studies of Monkeys and Apes* (New York: Holt Reinhart and Winston).

Dolhinow, Phyllis (ed.) (1972) *Primate Patterns* (New York: Holt, Reinhart and Winston).

Emlen, John (1960) 'Current Field Studies of the Mountain Gorilla', *South African Journal of Science* 56: 88–89.

Epstein, Steven (1996) *Impure Science: AIDS, Activism and the Politics of Knowledge* (Berkeley CA: University of California Press).

Epstein, Steven (1997) 'Activism, Drug Regulation and the Politics of Therapeutic Evaluation in the AIDS Era', *Social Studies of Science* 27: 691–726.

PROOF ONLY

07-Rees-077368.qxd 3/15/2007 7:32 PM Page 22

Fossey, Dian (1983) *Gorillas in the Mist* (London: Hodder and Stoughton).
Fouts, Roger (1997) *Next of Kin* (New York: William Morrow).
Frisch, John E. (1959) 'Research on Primate Behavior in Japan', *American Anthropologist* 61: 584–96.
Galdikas, Biruté (1995) *Reflections of Eden: My Life with the Orangutans of Borneo* (London: Gollancz).
Goodall, Jane (1962) 'Nest Building Behaviour in the Free-ranging Chimpanzee', *Annals of the New York Academy of Sciences* 102: 455–67.
Goodall, Jane (1990) *Through a Window: Thirty Years with the Chimpanzees of Gombe* (London: Weidenfeld and Nicholson).
Gregory, Jane & Steve Miller (1998) *Science in Public: Communication, Culture and Credibility* (New York: Plenum)
Griffin, Donald (1978) 'Prospects for a Cognitive Ethology', *Behavioral and Brain Sciences* 4: 527–38.
Griffin, Donald (1984) *Animal Thinking* (Cambridge MA: Harvard University Press).
Griffin, Donald (1992) *Animal Minds* (Chicago, IL: University of Chicago Press).
Gupta, Akhil & James Ferguson (eds) (1997) *Anthropological Locations: Boundaries and Grounds of a Field Science* (Berkeley CA: University of California Press.
Hall, K.R.L. (1960) 'Social Vigilance Behaviour of the Chacma Baboon, *Papio ursinus*', *Behaviour* 16: 261–94.
Hall K.R.L. (1962) 'Numerical Data, Maintenance Activities and Locomotion of the Wild Chacma Baboon', *Proceedings of the Zoological Society of London* 139: 181–220.
Haraway, Donna (1990) *Primate Visions* (London: Verso).
Haraway, Donna (2003) *The Companion Species Manifesto: Dogs, People and Significant Otherness* (Chicago, IL: Prickly Paradigm).
Harrison, Barbara (1962) *Orang-utan* (London: Collins).
Hayes, Harold (1990) *The Dark Romance of Dian Fossey* (London: Chatto & Windus).
Henke, Christopher (2000) 'Making a Place for Science: The Field Trial', *Social Studies of Science* 30: 483–511.
Henninger-Voss, Mary (ed.) (2002) *Animals in Human Histories: The Mirror of Nature and Culture* (Rochester, NY: University of Rochester Press).
Hevly, Bruce (1996) 'The Heroic Science of Glacier Motion', *Osiris* 11: 66–86.
Heyes, Celia (1987) 'Cognisance of Consciousness in the Study of Animal Knowledge', in W. Callebaut & R. Pinxten (eds), *Evolutionary Epistemology: A Multiparadigm Program* (Boston, MA: Reidel).
Hilgartner, Steven (1990) 'The Dominant View of Popularisation: Conceptual Problems, Political Uses', *Social Studies of Science* 20: 519–39.
Humphrey, Nicholas (1977) 'Review of Griffin, *The Question of Animal Awareness*', *Animal Behaviour* 25: 521–22.
Jay, Phyllis (1968) *Primates: Studies in Adaptation and Variability* (New York: Holt, Reinhardt and Winston).
Jardine, N., J.A. Secord & E.C. Spary (eds) (1996) *Cultures of Natural History* (Cambridge: Cambridge University Press).
Jolly, Alison (1972) *The Evolution of Primate Behaviour* (London: Macmillan).
Kennedy, John S. (1992) *The New Anthropomorphism* (Cambridge: Cambridge University Press).
Kohler, Robert (2002a) 'Place and Practice in Field Biology', *History of Science* 40: 189–210.
Kohler, Robert (2002b) *Landscapes and Labscapes: Exploring the Lab–Field Border in Biology* (Chicago, IL: University of Chicago Press).
Kohler, Wolfgang (1925) *The Mentality of Apes* (London: Routledge and Kegan Paul).
Kortlandt, Adriaan (1962) 'Chimpanzees in the Wild', *Scientific American* 206: 128–38
Kuklick, Henrika (1991) *The Savage Within: A Social History of British Anthropology 1885–1945* (Cambridge: Cambridge University Press)
Kuklick, Henrika & Robert Kohler (1996) 'Introduction' to H. Kuklick & R. Kohler (eds), *Science in the Field*, *Osiris* 11: 1–14.

PROOF ONLY

07-Rees-077368.qxd 3/15/2007 7:32 PM Page 23

Kuklick, Henrika (1997) 'After Ishmael: The Fieldwork Tradition and its Future', in A. Gupta & J. Ferguson (eds), *Anthropological Locations: Boundaries and Grounds of a Field Science* (Berkeley CA: University of California Press): 47–65.
Kummer, Hans (1995) *In Quest of the Sacred Baboon: A Scientist's Journey* (Princeton NJ: Princeton University Press) (trans. M. Ann Biederman-Thorson)
Kummer, Hans, W. Goetz & W. Angst (1970) 'Cross-species Modifications of Social Behaviour in Baboons', in J.R. Napier & P.H. Napier (eds), *Old World Monkeys: Evolution, Systematics & Behaviour* (New York: Academic Press).
Kummer, Hans & Fred Kurt (1963) 'Social Units of a Free-living Population of Hamadryas Baboons', *Folia Primatologica* 1: 4–19.
Latour, Bruno (1999) *Pandora's Hope: Essays on the Reality of Science Studies* (Cambridge, MA: Harvard University Press).
Latour, Bruno & Shirley Strum (1986) 'Human Social Origins: Please Tell Us Another Origin Story!' *Journal of Biological and Social Structures* 9: 169–87.
Lewenstein, Bruce (1992) 'Cold Fusion and Hot History', *Osiris* 7: 135–63.
Lewenstein, Bruce (1995) 'From Fax to Facts: Communication and the Cold Fusion Saga', *Social Studies of Science* 25: 403–36.
Linden, Eugene (1986) *Silent Partners: The Legacy of the Ape Language Experiments* (New York: Ballantine Books).
Lorenz, Konrad (1953) *Man Meets Dog* (London: Methuen).
Lorenz, Konrad (1952) *King Solomon's Ring: New Light on Animal Ways* (New York: Crowell).
Mead, Margaret (1928) *Coming of Age in Samoa* (New York: William Morrow).
Mech, L David (1985) *The Wolf: The Ecology and Behaviour of an Endangered Species* (Minneapolis, MN: University of Minnesota Press).
Mitchell, Robert, Nicholas Thompson & H. Lyn Miles (eds) (1997) *Anthropomorphism, Anecdotes and Animals* (New York: SUNY Press).
Mitman, Gregg (1992) *The State of Nature: Ecology, Community and American Social Thought, 1900–1950* (Chicago IL: University of Chicago Press).
Mitman, Gregg (2006) 'Pachyderm Personalities: The Media of Science, Politics and Conservation', in L. Daston & G. Mitman (eds), *Thinking With Animals: New Perspectives on Anthropomorphism* (New York: Columbia University Press): 175–95.
Montgomery, Sy (1991) *Walking with the Great Apes: Jane Goodall, Dian Fossey and Biruté Galdikas* (New York: Houghton Mifflin).
Moss, Cynthia (2000) *Elephant Memories: Thirteen Years in the Life of an Elephant Family* (Chicago, IL: University of Chicago Press).
Mowat, Farley (1987) *Woman in the Mists* (New York: Warner Books).
Mundis, Hester (1976) *No, He's not a Monkey, He's an Ape, and He's My Son* (New York: Crown Publishers).
Myers, Greg (1990) *Writing Biology: Texts in the Social Construction of Scientific Knowledge* (Madison, WI: University of Wisconsin Press).
Neve, Michael & Roy Porter (1977) 'Alexander Catcott: Glory and Geology', *British Journal for the History of Science* 10: 37–60.
Nyhart, Lynn (1996) 'Natural History and the New Biology' in N. Jardine, J.A. Secord & E.C. Spary (eds), *Cultures of Natural History* (Cambridge: Cambridge University Press): 426–43.
Packer, Craig (1996) *Into Africa* (Chicago, IL: University of Chicago Press).
Pang, Alex (1996) 'Gender, Culture and Astrophysical Fieldwork: Elizabeth Campbell and the Lick Observatory–Crocker Eclipse Expeditions', *Osiris* 11: 17–43.
Porter, Roy (1978) 'Gentlemen and Geology: The Emergence of a Scientific Career', *Historical Journal* 21: 809–36.
Porter, Roy (ed.) (1992) *The Popularisation of Medicine 1650–1850* (London: Routledge).
Pratt, Mary Louise (1992) *Imperial Eyes: Travel Writing and Transculturation* (London: Routledge).
Quiatt, Duane (1997) 'Silent Partners?', in R. Mitchell, N. Thompson & H.L. Miles (eds), *Anthropomorphism, Anecdotes and Animals*, pp. 220–36

PROOF ONLY

07-Rees-077368.qxd 3/15/2007 7:32 PM Page 24

Radick, Gregory (2000) 'Morgan's Canon, Garner's Phonograph, and the Evolutionary Origins of Language and Reason', *British Journal for the History of Science* 33: 3–23.
Rees, Amanda (1999) 'Higamous, Hogamous, Woman Monogamous', *Feminist Theory* 1: 365–70
Rees, Amanda (2001a) 'Practicing Infanticide, Observing Narrative: Controversial Texts in a Field Science', *Social Studies of Science* 31:507–31.
Rees, Amanda (2001b) 'Anthropomorphism, Anthropocentrism and Anecdote: Primatologists on Primatology', *Science, Technology, & Human Values* 26: 227–47.
Rees, Amanda (2006) 'A Place that Answers Questions: Primatological Field Sites and the Making of Authoritative Observations', *Studies in History and Philosophy of Biological and Biomedical Sciences*, 37: 311–33
Reynolds, Vernon (1963) 'An Outline of the Behaviour and Social Organisation of Forest Chimpanzees', *Folia Primatologica* 1: 95–102.
Reynolds, Vernon (1965) *Budongo: A Forest and its Chimpanzees* (London: Methuen and Co.).
Reynolds, Vernon (1967) *The Apes: The Gorilla, Chimpanzee, Orangutan and Gibbon: Their History and Their World* (London: Cassel & Co.).
Roth, Wolff-Michael & G Michael Bowen (1999) 'Digitizing Lizards: The Topology of 'Vision' in Ecological Fieldwork', *Social Studies of Science* 19: 719–64.
Rudwick, Martin (1976) 'The Emergence of a Visual Language for Geological Science, 1760–1840', *History of Science* 14: 149–95.
Rudwick, Martin (1985) *The Great Devonian Controversy: The Shaping of Knowledge Among Gentlemanly Specialists* (Chicago, IL: University of Chicago Press).
Sahlins, Marshall (1977) *The Use and Abuse of Biology: An Anthropological Critique of Sociobiology* (Ann Arbor, MI: University of Michigan Press).
Sapolsky, Robert (2001) *A Primate's Memoir: Love, Death and Baboons in East Africa* (London: Random House).
Scott, J.P. (1950) 'Introduction', *Annals of the New York Academy of Sciences* 51: 1003–05.
Schaller, George (1961) 'The Orang-utan in Sarawak', *Zoologica* 4: 73–82.
Schaller, George (1963) *The Mountain Gorilla: Ecology and Behavior* (Chicago, IL: University of Chicago Press).
Schaller, George (1964) *The Year of the Gorilla* (Chicago, IL: University of Chicago Press).
Schaller, George (1965) 'Appendix: Field Procedures', in I. DeVore (ed.), *Primate Behavior: Field Studies of Monkeys and Apes* (New York: Holt Reinhart and Winston): 622–29.
Schultz, A. (1964) 'Primatological Symposia of 1962', *Folia Primatologica* 2: 119–23.
Schumaker, Lynette (1996) 'A Tent with a View: Colonial Officers, Anthropologists and the Making of the Field in Northern Rhodesia, 1937–1960', *Osiris* 11: 237–58.
Segerstrale, Ullica (2000) *Defenders of the Truth: The Sociobiology Debates* (Oxford: Oxford University Press).
Shapin, Steven (1974) 'The Audience for Science in Eighteenth Century Edinburgh', *History of Science* 12: 95–121.
Shapin, Steven (1990) 'Science and the Public', in R. Olby, G.N. Cantor & J.R.R. Christie (eds), *Companion to the History of Modern Science* (London: Routledge): 990–1007.
Smuts, Barbara (1999 [1985]) *Sex and Friendship in Baboons* (Cambridge, MA: Harvard University Press).
Smuts, Barbara (2001) 'Encounters with Animal Minds', in E. Thompson (ed.), *Between Ourselves: Second-person Issues in the Study of Consciousness* (Exeter, Devon: Imprint Academic): 293–309.
Smuts, Barbara, Dorothy Cheney, Robert Seyfarth & Richard Wrangham (eds) (1987) *Primate Societies* (Chicago, IL: University of Chicago Press).
Southwick, C., M.A. Beg & M.R. Siddiqi (1961) 'A Population Survey of Rhesus Monkeys in Villages, Towns and Temples of Northern India', *Ecology* 42: 538–47.
Southwick, C., M.A. Beg & M.R. Siddiqi (1965) 'Rhesus Monkeys in North India', in I. DeVore (ed.) *Primate Behavior: Field Studies of Monkeys and Apes* (New York: Holt Reinhart and Winston): 111–159.
Sperling, Susan (1991) 'Baboons with Briefcases vs. Langurs in Lipstick', in M. di Leonardo (ed.), *Gender at the Crossroads of Knowledge: Feminist Antrhopology in the Postmodern Era* (Berkeley, CA: University of California Press): 205–34.

PROOF ONLY

07-Rees-077368.qxd 3/15/2007 7:32 PM Page 25

Stocking, George (1983) *Observers Observed: Essays on Ethnographic Fieldwork* (Madison, WI: University of Wisconsin Press).
Strier, Karen (1992) *Faces in the Forest: The Endangered Muriqui Monkeys of Brazil* (New York: Oxford University Press).
Strum, Shirley (2001 [1987]) *Almost Human: A Journey into the World of Baboons* (London: Elm Tree Books).
Strum, Shirley & Fedigan, Linda (eds) (2000) *Primate Encounters: Models of Science, Gender and Society* (Chicago, IL: University of Chicago Press).
Temerlin, Maurice (1976) *Lucy: Growing Up Human* (New York: Science and Behaviour Books).
Tinbergen, Niko (1965) *Animal Behavior* (New York: Time-Life Books).
Tobias, P.V. (1961) 'The Work of the Gorilla Research Unit in Uganda', *South African Journal of Science* 57: 297–98.
Tomasello, Michael & Josep Call (1997) *Primate Cognition* (Oxford: Oxford University Press).
Wallman, Joel (1992) *Aping Language* (Cambridge: Cambridge University Press).
Washburn, Sherwood & Irven DeVore (1961) 'The Social Life of Baboons', *Scientific American* 204: 62–71.
Watson, John B. (1913) 'Psychology as the Behaviourist Views It', *Psychological Review* 20: 158–77.
Weber, Bill & Amy Vedder (2002) *In the Kingdom of Gorillas: The Quest to Save Rwanda's Mountain Gorillas* (London: Aurum Press).
Whiten, Andrew & Richard Byrne (eds) (1997) *Machiavellian Intelligence II: Extensions and Evaluations* (Cambridge: Cambridge University Press).
Wilson, E.O. (1975) *Sociobiology: The New Synthesis* (Cambridge, MA: Harvard University Press).
Wolch, Jennifer & Jody Emel (eds) (1998) *Animal Geographies: Place, Politics and Identity in the Nature–Culture Borderlands* (New York: Verso).

Appendix 1

The Texts

Fossey, Dian (1983) *Gorillas in the Mist* (London: Hodder & Stoughton)

Dian Fossey began her study of the mountain gorillas in the Congo in 1967. She had to abandon her initial site – where George Schaller had worked earlier – as a result of political instability in the country, and eventually founded the Karisoke research station in the Parc National des Volcans in Rwanda. The book is based on her experiences there from 1968 until 1980, when she left to teach at Cornell. Dian Fossey returned to Karisoke in 1983, and was killed there in 1985. Her life has been the subject of much interest: for further information, see Campbell (2000), Hayes (1990), Montgomery (1991) and Mowatt (1987).

Galdikas, Biruté (1995) *Reflections of Eden – My Life with the Orangutans of Borneo* (London: Gollancz)

Galdikas' study of orang-utans began in 1971, and like those of Fossey and Goodall, was sponsored by Louis Leakey. Unlike the other two, much of her work was also concerned with returning captive orang-utans to the wild. Her study site, Camp Leakey is based in Tanjung Putin Reserve, in Borneo, and has been continuously operated since 1971. In 1986, Galdikas set up the Orang-utan Foundation International to encourage public

PROOF ONLY

07-Rees-077368.qxd 3/15/2007 7:32 PM Page 26

support of orang-utans in Borneo and elsewhere. More details can be found at <www.orangutan.org/home/home>.

Goodall, Jane (1990) *Through a Window: Thirty Years with the Chimpanzees of Gombe* (London: Weidenfeld and Nicholson)

Jane Goodall began work in East Africa in 1960, and the Gombe Stream Research Centre was founded in 1967. Work at the site was disrupted in 1975, when Zairian rebels kidnapped four foreign students from the site. Tanzanian research assistants continued data collection until foreign students and researchers were allowed to return to the site in 1989/90, and work there has continued ever since. Goodall has since redirected her attention to raising public awareness of the plight of the chimpanzee, and the other great apes, both in the wild and in captivity. Details can be found at <www.janegoodall.org/>.

Kummer, Hans (1995) *In Quest of the Sacred Baboon: A Scientist's Journey*, trans. M. Ann Biederman-Thorson (Princeton, NJ: Princeton University Press)

Kummer began research in Ethiopia with his colleague and assistant Fred Kurt in 1960. The initial year-long study was followed with a series of later projects from 1967 to 1977 (not continuous) when research stopped as a result of the war with Somalia.

Reynolds, Vernon (1965) *Budongo: A Forest and its Chimpanzees* (London: Methuen and Co.)

Although the Budongo site had been visited briefly by Japanese researchers, Reynolds was the first to carry out a lengthy study at that site. The work described in this book began in 1962 and lasted for approximately 1 year. Japanese researchers again visited the site, but sustained work did not begin until 1990, when Reynolds and colleagues set up the Budongo Forest Project, which continues to the present day. Details can be found at <www.budongo.org>.

Sapolsky, Robert (2001) *A Primate's Memoir: Love, Death and Baboons in East Africa* (London: Random House)

Sapolsky's account of his research with the baboons of the Serengeti in Kenya begins in 1979. The research has not been continuous, but takes place during 3 months of the year, up to the present day.

Schaller, George (1965) *The Year of the Gorilla* (London: Collins)

Schaller's research was based at Kabara, in what was then the Albert National Park, Congo. Other researchers and travellers had watched gorillas there before, but with his wife, Schaller was the first to habituate and to study the social life of the gorillas. The book is based on research that began in 1959 and lasted approximately 1 year, as part of the African Primate Expedition organized from the University of Wisconsin. His work at Kabara ended in September 1960, although supplementary observations of gorillas and other primates were made before fieldwork terminated in January 1961.

PROOF ONLY

07-Rees-077368.qxd 3/15/2007 7:32 PM Page 27

Smuts, Barbara (1999 [1985]) *Sex and Friendship in Baboons* (Cambridge, MA: Harvard University Press) (2nd edition with a new preface published in 1999)

Smuts began studying wild baboons at Kekopey, near Gilgil in Kenya, in 1976. She has also worked on the baboons of Gombe, as well as captive chimpanzees and bottlenose dolphins.

Strier, Karen (1992) *Faces in the Forest: The Endangered Muriqui Monkeys of Brazil* (New York: Oxford University Press)

Strier's work began at Fazenda Montes Claros in Minas Gerais, Brazil in 1982, and has continued to the present day.

Strum, Shirley (2001 [1987]) *Almost Human: A Journey into the World of Baboons* (Chicago, IL: University of Chicago Press) (2nd edition published 2001 with a new introduction)

Strum also worked on the baboons of Kekopey, and was responsible for their translocation to Chololo in 1984. Research on the three baboon troops continues to the present day.

Weber, Bill & Amy Vedder (2002) *In the Kingdom of Gorillas: The Quest to Save Rwanda's Mountain Gorillas* (London: Aurum Press)

Weber and Vedder began work on the gorillas of Rwanda in 1978 at Karisoke. Later, they moved to other sites in the area to encourage conservation by habituating gorillas for tourist groups. Work was disrupted by the genocide experienced in Rwanda in the 1990s, but work on the gorillas still continues.

Amanda Rees is a lecturer in the Department of Sociology, University of York UK. Her interests lie in the history of the behavioural and animal sciences, the public understanding of science and popular science, the history of science fiction and the sociology of the human/animal relationships. She is in the final stages of completing a monograph, *Infanticide and Field Science*, which analyses the ongoing controversy surrounding infanticide in non-human primates.

Address: Department of Sociology, University of York, Heslington, York YO10 5DD, UK; fax: +44 (0)1904 433043; email: ar24@york.ac.uk

PROOF ONLY

07-Rees-077368.qxd 3/15/2007 7:32 PM Page 28

PROOF ONLY